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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/772,595
Filing Date: February 05, 2004
Appellant(s): BOKISA ET AL.

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Gregory Turocy
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 5, 2006 appealing from the Office action mailed October 13, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

10-245693	KUNISHI ET AL.	9-1998
3,697,391	PASSAL	10-1972
1,544,847	RAMANAUSKIENE ET AL.	2-1990

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

I. **Claims 1-6, 8 and 24 have been rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-245693 ('693) in combination with Passal (US Patent No. 3,697,391).**

JP '693 teaches a method of electroplating a quaternary alloy comprising nickel and cobalt, comprising:

(a) providing an electroplating bath comprising:

- (i) an anode;
- (ii) a cathode (= an electronic part);
- (iii) water (= from water-soluble salt);
- (iv) ionic nickel (= from a nickel salt);
- (v) ionic cobalt (= from a water-soluble salt of cobalt);
- (vi) at least two ionic alloy metals (= from a water-soluble salt of B, Co, Cu, Fe, Mn, P, Sn and/or Zn); and

(vii) at least one brightener (= a heterocyclic quaternary ammonium compound); and

(b) applying a current (page 4, Table, "A/dm²") to the electroplating bath whereby the quaternary alloy comprising nickel, cobalt, and at least two alloy metals forms on the cathode (abstract; and page 1, [0001] and [0007]).

The at least two ionic alloy metals comprise at least two metals selected from the group consisting of B, Cu, Fe, Mn, Sn and Zn in ionic form (abstract; and page 1, [0007]).

The electroplating bath further comprises at least one sulfur containing brighteners selected from the group consisting of sulfinic acids, sulfonic acids, aromatic sulfonates, aromatic sulfonates, sulfonamides, sulfonimides, sulfimides, and sulfo-betaines (= sulfonic acids and aromatic sulfonates) [abstract; page 1, [0007]; and page 1, claim 1].

The electroplating bath has a pH from about 2 to about 6 (= pH 3-10) [abstract; and page 1, [0007]] and a temperature from about 10°C to about 90°C (page 3, Table, “°C”).

The electroplating bath comprises from about 0.001% to about 5% by weight of at least one brightener (= 0.01 g/l to 1 g/l) [page 2, [0015]].

The method of JP '693 differs from the instant invention because JP '693 does not disclose the following:

- a. Wherein the at least one brightener is an acetylenic brightener, as recited in claim 1.

Passal teaches that acetylenic compounds are primary brighteners (col. 3, lines 3-31) used in typical nickel-containing, cobalt-containing and nickel-cobalt-containing bath compositions (col. 6, lines 30-38).

Passal teaches a process for the production of sound electrodeposits containing nickel and/or cobalt over a wide range of concentrations of primary brighteners and/or metallic impurities (col. 2, lines 22-30). The impurities may be introduced when commercial grade salts are used to prepare the bath composition, or the metallic impurities may occur as a result of dissolution of parts which may fall into the plating bath composition during the plating process (col. 1, lines 68-72).

Passal teaches that the substrates on which the nickel-containing, cobalt-containing and nickel-cobalt-containing electrodeposits may be applied may be metal or

metal alloys such as brass, bronze, and zinc-base die castings (col. 2, line 60 to col. 3, line 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method described by JP '693 with wherein the at least one brightener is an acetylenic brightener because acetylenic compounds are primary brighteners used in typical nickel-containing, cobalt-containing and nickel-cobalt-containing bath compositions as taught by Passal (col. 3, lines 3-31; and col. 6, lines 30-38). When used alone or in combination, they may produce semi-lustrous, fine-grained deposits (col. 3, lines 24-31).

Passal teaches electrodepositing a quaternary alloy. Passal teaches that metallic impurities may occur as a result of dissolution of parts which may fall into the plating bath composition during the plating process (col. 1, lines 68-72). Thus, this would have suggested that when a bronze cathode is used, one having ordinary skill in the art would have expected that the electrodeposit would have contained copper and tin that was fallen into the plating bath composition from dissolution of the bronze cathode.

b. Wherein the acetylenic brightener is selected from the group consisting of acetylenic alcohols, acetylenic amines, acetylenic esters, acetylenic sulfonic acids and sulfonates, alkoxylated acetylenic alcohols, and acetylenic carboxylic acids, as recited in claim 3.

c. Wherein the acetylenic brightener is selected from the group consisting of

ethoxylated butynediol; 2-butyne-1,4-diol; propargyl alcohol; ethoxylated propargyl alcohol; hydroxyethyl propynyl ether; beta-hydroxypropyl, propynyl ether; gamma-propynyloxy, bis-beta-hydroxyethyl ether 2-butyn-1,4-diol; bis-beta-hydroxypropyl ether 2-butyn-1,4-diol; 1,4-di-(beta-hydroxyethoxy)-2-butyne; 1,4-di-(beta-hydroxy-gamma-chloropropoxy)-2-butyne; 1 ,4-di-(beta-gamma-epoxypropoxy)-2-butyne; 1,4-di-(beta-hydroxy-gamma-butoxoy)-2-butyne; 1,4-di-(2'-hydroxy-4'-oxa-6'-heptenoxy)-2-butyne; 2,4,6-trimethyl N-propargyl pyridinium bromide; 2-methyl-3-butyn-2-ol; I-(beta-hydroxyethoxy)-2-propyne; and 1-(beta-hydroxypropoxy)-2-propyne, as recited in claim 24.

Passal adds effective amounts of at least one member selected from the group of cooperating additives consisting of:

- (a) a primary brightener;
- (b) a secondary brightener;
- (c) a second auxiliary brightener, and
- (d) an anti-pitting agent (col. 2, lines 41-47)

to *typical* nickel-containing, cobalt-containing and nickel-cobalt-containing bath compositions (col. 6, lines 30-38).

Examples of a primary brightener are 2,4,6-trimethyl N-propargyl pyridinium bromide, 2-butyne-1,4-diolpropargyl alcohol and 2-methyl-3-butyn-2-ol (col. 3, lines 3-31).

Examples of a secondary brightener are aromatic sulfonates, sulfoamides,

sulfonimides and sulfinates (col. 3, lines 32-41).

Such plating additives compounds, which may be used singly or in suitable combinations, have one of more of the following functions:

- (1) To obtain semi-lustrous deposits or to produce substantial grain-refinement over the usual dull, matter, grainy, non-reflective deposits from additive free baths.
- (2) To act as ductilizing agents when used in combination with other additives such as primary brighteners.
- (3) To control internal stress of deposits, generally by making the stress desirably compressive.
- (4) To introduce controlled sulfur contents into the electrodeposits to desirably affect chemical reactivity, potential differences in composite coating systems, etc. thereby decreasing corrosion, better protecting the basis metal from corrosion, etc. (col. 3, lines 42-56).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method described by JP '693 with wherein the electroplating bath comprises at least one acetylenic brightener because adding effective amounts of these brighteners to typical nickel-containing, cobalt-containing and nickel-cobalt-containing bath compositions would have provided the functions (1) to (4) as described above (col. 3, line 3 to col. 4, line 22).

d. Wherein a current density of about 1 ASF or more and about 500 ASF or less to the electroplating bath, as recited in claim 5.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of JP '693 by applying a current density of about 1 ASF or more and about 500 ASF or less to the electroplating bath because the current density is a result-effective variable and one skilled in the art has the skill to calculate the current density that would determine the success of the desired reaction to occur, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

JP '693 teaches current densities of 0.1 A/dm^2 , 1.0 A/dm^2 and 2.0 A/dm^2 (page 4, Table, "A/dm²").

e. Wherein the electroplating bath comprises about 10 g/l or more and about 150 g/l or more of ionic nickel, about 0.5 g/l or more and about 70 g/l or less of ionic cobalt, about 0.01 g/l or more and about 20 g/l or less of each of the ionic alloy metals, as recited in claim 6.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of JP '693 with wherein the electroplating bath comprises about 10 g/l or more and about 150 g/l or more of ionic nickel, about 0.5 g/l or more and about 70 g/l or less of ionic cobalt, about 0.01 g/l or more and about 20 g/l or less of each of the ionic alloy metals because

changes in concentration is not a patentable modification; however, such changes may impart patentability to a process if the ranges claimed produce new and unexpected results which are different in kind and not merely in degree from results of the prior art, such ranges are termed "critical" ranges and Applicant has the burden of proving such criticality; even though Applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within capabilities of one skilled in the art; more particularly, where general conditions of the claim are disclosed in the prior art, it is not inventive to discover optimum or workable ranges by routine experimentation. *In re Aller*, 220 F2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) and MPEP § 2144.05.

JP '693 teaches different concentrations of the ionic metals in the electroplating baths (page 3, Table).

f. Wherein the quaternary alloy comprises about 2% by weight or less of components other than nickel, cobalt, and at least two alloy metals, as recited in claim 8.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of JP '693 with wherein the quaternary alloy comprises about 2% by weight or less of components other than nickel, cobalt, and at least two alloy metals because changes in concentration is not a patentable modification; however, such changes may impart

patentability to a process if the ranges claimed produce new and unexpected results which are different in kind and not merely in degree from results of the prior art, such ranges are termed “critical” ranges and Applicant has the burden of proving such criticality; even though Applicant’s modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within capabilities of one skilled in the art; more particularly, where general conditions of the claim are disclosed in the prior art, it is not inventive to discover optimum or workable ranges by routine experimentation. *In re Aller*, 220 F2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) and MPEP § 2144.05.

JP ‘693 teaches different concentrations of the ionic metals in the electroplating baths (page 3, Table).

II. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable JP 10-245693 ('693) in combination with **Passal** (US Patent No. 3,697,391) as applied to claims 1-6, 8 and 24 above, and further in view of **Hui** (US Patent No. 6,372,118 B2).

JP ‘693 and Passal are as applied above and incorporated herein.

The method of JP ‘693 and Passal differs from the instant invention because they do not disclose wherein the anode comprises at least one of nickel, cobalt, at least one alloy metal, iridium oxide, platinum, titanium, graphite, carbon, and platinum-titanium.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of JP ‘693 with

wherein the anode comprises at least one of nickel, cobalt, at least one alloy metal, iridium oxide, platinum, titanium, graphite, carbon, and platinum-titanium because it is conventional in the art to have used an anode made of the same material that is being electrodeposited. Thus, if nickel and cobalt are being electrodeposited, then a nickel anode and/or a cobalt anode would have been obvious to use.

Furthermore, JP '693 teaches electroplating a Ni-Fe-Co alloy (abstract; and page 1, [0007]), and Hui teaches a method of electroplating a Ni-Fe-Co alloy using nickel and iron anodes (col. 4, line 65 to col. 5, line 3). Thus, it would have been obvious to one having ordinary skill in the art to use nickel and iron anodes to electroplate a Ni-Fe-Co alloy.

Furthermore, it has been held that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination. See MPEP § 2144.06 and § 2144.07.

III. **Claims 9-12, 15-17 and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-245693 ('693) in combination with **Passal** (US Patent No. 3,697,391).

JP '693 and Passal are as applied for the reasons as discussed above and incorporated herein.

JP '693 also teaches that the electroplating bath further comprises at last one organic brightener selected from the group consisting of ethylenic alcohols, coumarins,

aldehydes, compounds containing a C≡N linkage, and heterocyclics (= aldehydes and N-heterocyclics) [abstract; page 1, [0007]; and page 1, claim 1].

The at least two ionic alloy metals comprise iron and boron in ionic form (abstract; page 1, [0007]).

The method of JP '693 differs from the instant invention because JP '693 does not disclose the following:

a. Wherein the electroplating bath comprises about 40 g/l or more and about 100 g/l or more of ionic nickel, about 1 g/l or more and about 30 g/l or less of ionic cobalt, about 0.05 g/l or more and about 10 g/l or less of each of the ionic alloy metals, as recited in claim 9.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of JP '693 with about 40 g/l or more and about 100 g/l or more of ionic nickel, about 1 g/l or more and about 30 g/l or less of ionic cobalt, about 0.05 g/l or more and about 10 g/l or less of each of the ionic alloy metals because changes in concentration is not a patentable modification; however, such changes may impart patentability to a process if the ranges claimed produce new and unexpected results which are different in kind and not merely in degree from results of the prior art, such ranges are termed "critical" ranges and Applicant has the burden of proving such criticality; even though Applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within capabilities of one skilled in the art; more

particularly, where general conditions of the claim are disclosed in the prior art, it is not inventive to discover optimum or workable ranges by routine experimentation. *In re Aller*, 220 F2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) and MPEP § 2144.05.

JP '693 teaches different concentrations of the ionic metals in the electroplating baths (page 3, Table).

b. Wherein a current density of about 10 ASF or more and about 200 ASF or less is applied to the electroplating bath, as recited in claim 10.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of JP '693 by applying a current density of about 10 ASF or more and about 200 ASF or less to the electroplating bath because the current density is a result-effective variable and one skilled in the art has the skill to calculate the current density that would determine the success of the desired reaction to occur, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

JP '693 teaches current densities of 0.1 A/dm², 1.0 A/dm² and 2.0 A/dm² (page 4, Table, "A/dm²").

IV. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 10-245693** ('693) in combination with **Passal** (US Patent No. 3,697,391) as applied to claims 9-12, 15-17 and 25 above, and further in view of **SU 1544847** ('847).

JP '693 and Passal are as applied above and incorporated herein.

The method of JP '693 and Passal differs from the instant invention because they do not disclose wherein the electroplating bath further comprises a sulfo-betaine brightener.

SU '847 teaches that adding a betaine of 2-(4-pyridyl)ethanesulfonic acid to an acidic nickel or nickel-cobalt alloy electrolyte increases the hardness of their coatings (abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of JP '693 and Passal with wherein the electroplating bath further comprises a sulfo-betaine brightener because this would have increased the hardness of nickel and nickel-cobalt alloy coatings as taught by SU '847 (abstract).

Since there are minimal amounts of the at least two ionic alloy metals in the electroplating bath and the electrodeposited coating, it appears that there would have been a reasonable expectation of success to modify the electroplating bath of JP '693 by adding a sulfo-betaine brightener. MPEP § 2143.02.

V. Claims 18-23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-245693 ('693) in combination with Passal (US Patent No. 3,697,391).

JP '693 and Passal are as applied for the reasons as discussed above and incorporated herein.

The method of JP '693 differs from the instant invention because JP '693 does not disclose the following:

- a. Wherein the electroplating bath further comprises at least one conductivity salt, as recited in claim 22.
- b. Wherein the conductivity salt is selected from the group consisting of boric acid, sodium sulfate, sodium chloride, potassium sulfate, and potassium chloride, as recited in claim 23.

Passal teaches using a bath compatible cation, such as a chloride ion, Cl^- , in the bath; and using buffering components in addition to or in place of boric acid for buffering if necessary or desirable (col. 7, line 68 to col. 8, line 8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of JP '693 with wherein the electroplating bath further comprises at least one conductivity salt; and wherein the conductivity salt is selected from the group consisting of boric acid, sodium sulfate, sodium chloride, potassium sulfate, and potassium chloride because such compounds would have adjusted the pH of the bath to improve the tolerance of the bath to the metallic ions as taught by Passal (col. 7, line 68 to col. 8, line 8).

(10) Response to Argument

- (i) Applicants state that JP '693 and Passal, independently or in combination, fail to teach or suggest any quaternary alloys including quaternary Ni-Co alloys.

In response, JP '693 teaches that the nickel or nickel alloy electroplating bath consists of a nickel salt or a nickel salt and a water-soluble salt of one or more elements selected from boron, cobalt, copper, iron, manganese, phosphorus, tin and zinc (abstract; and page 1, [0007]). This teaching would have suggested a quaternary Ni-Co alloy.

Passal was used in the Examiner's rejection for the teaching of acetylenic brighteners (col. 3, lines 3-23) in nickel-containing, cobalt-containing and nickel-cobalt containing bath compositions (col. 6, lines 30-38).

However, Passal teaches a quaternary Ni-Co alloy:

NiSO ₄ · 7H ₂ O -----	300 g/l
NiCl ₂ · 6H ₂ O -----	60 g/l
CoSO ₄ · 7H ₂ O -----	60 g/l
H ₃ BO ₃ -----	40 g/l
Sodium benzene monosulfonate -----	7.5 g/l
Sodium allyl sulfonate -----	2.3 g/l
2-methyl-3-butyn-2-ol -----	0.01 g/l
N-1,2-dichloropropenyl pyridinium chloride -	0.01 g/l
Sodium di-n-hexyl sulfosuccinate -----	0.025 g/l
pH (electrometric) -----	3.8

This solution was used under the same conditions as in Example I (cols. 11-12, Example 8), where an amount of zinc sulfate solution was added to the electroplating

bath composition to produce a concentration of 0.08 g/l of Zn²⁺ (col. 8, Example 1).

Furthermore, Passal teaches that among the secondary auxiliary brighteners one may include ions or compounds of certain metals and metalloids such as zinc, cadmium, selenium, etc. which, although they are not generally used at present, have been used to augment deposit luster, etc. (col. 4, lines 23-31).

The overall solution in Example 8 would have contained *ionic nickel*, *ionic cobalt*, *ionic boron* and *ionic zinc*. This would have formed a quaternary Ni-Co alloy, i.e., a **Ni-Co-B-Zn** alloy.

(ii) Applicants state that Passal teaches that the addition of acetylenic compounds to a bath results in "a dark, thin, and badly striated electrodeposit".

Applicants state that from the teaching of Passal, one skilled in the art would NOT have been motivated to select only acetylenic compounds of Passal and replace the quaternary ammonium salt brightener of JP '693 with the acetylenic compounds.

Applicants state that contrary to the Examiner's contention, one skilled in the art would NOT have been motivated to replace the quaternary ammonium salt brightener of JP '693 with the acetylenic brightener of Passal since Passal explicitly teaches that 'the resulting nickel electroplated panel had a dark, thin, and badly striated electrodeposit."

In response, a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. V. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert.

Denied, 469 U.S. 851 (1984). In addition, a known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use, see *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994). Further, a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments, see *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). See MPEP § 2141.02, MPEP 2145X.D.1 and MPEP § 2123.

The electroplating baths recited in present claims 1, 9 and 18 are open to comprising more than one kind of brightener.

Passal teaches that a combination of 2-methyl-3-**butyn**-2-ol, N-1,2-dichloropropenyl **pyridinium** chloride and sodium hydroxymethyl **sulfonate** (cols. 11-12, Example 8) produces a brilliant, well-leveled, quite ductile deposit which had excellent low current density coverage (cols. 11-12, Example 8).

The method steps recited in present claims 1, 9 and 18 read on the methods disclosed in the prior art.

(iii) Applicants state that there is NO teaching or suggestion in Passal indicating that its acetylenic brighteners cause the uniform placement of two additional metals within the matrix of quaternary Ni-Co-M1-M2 alloys.

In response, Passal teaches a **Ni-Co-B-Zn** alloy in Example 8 (see (i) above).

Passal teaches that a combination of 2-methyl-3-butyn-2-ol, N-1,2-dichloropropenyl pyridinium chloride and sodium hydroxymethyl sulfonate produces a brilliant, well-leveled, quite ductile deposit which had excellent low current density coverage (cols. 11-12, Example 8).

Passal teaches a compound in a similar manner as instantly claimed (= 2-methyl-3-butyn-2-ol). One having ordinary skill in the art would have expected that the 2-methyl-3-butyn-2-ol would have caused the uniform placement of two additional metals within the matrix of quaternary Ni-Co-M1-M2 alloys because similar compounds can reasonably be expected to have similar properties.

Furthermore, it has been held that a newly discovered use or function of components does not necessarily mean the system is unobvious since this use or function may be inherent in the prior art. *Ex parte Pfeiffer* 135 USPQ 31.

(iv) Applicants state that the salt brighteners of JP '693 contribute to the conductivity of its electroplating bath, one skilled in the art would NOT change the conductivity of JP '693 electroplating bath by substituting an acetylenic brightener for its quaternary ammonium salt brighteners. Changes in bath conductivity would lead to changes in the metal deposition rates. Thus, there would be NO motivation for one skilled in the art to employ an acetylenic brightener in JP '693.

In response, JP '693 teaches that the nickel or nickel alloy electroplating bath consists of a nickel salt or a *nickel* salt and a water-soluble salt of one or more

elements selected from **boron**, **cobalt**, copper, iron, manganese, phosphorus, tin and **zinc** (abstract; and page 1, [0007]). This would have included a **Ni-Co-B-Zn** alloy.

Substituting the brightener disclosed by JP '693 with an acetylenic brightener disclosed by Passal would have given a nickel-cobalt alloy electroplating bath composition similar to that disclosed by Passal in Example 8 which had an excellent low current density coverage (cols. 11-12, Example 8).

(v) One skilled in the art would NOT have replaced the quaternary ammonium salt brightener of JP '693 with the acetylenic brightener of Passal because this would FRUSTRATE the purpose and teachings of JP '693.

In response, substituting the brightener disclosed by JP '693 with an acetylenic brightener disclosed by Passal would have given a nickel-cobalt alloy electroplating bath composition similar to that disclosed by Passal in Example 8 which produced a brilliant, well-leveled, quite ductile deposit which had excellent low current density coverage (cols. 11-12, Example 8).

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

(vi) Applicants state that claim 7 is NOT obvious over JP '693, Passal, and Hui for substantially the same reasons that claim 1 is not obvious over JP '693 and Passal.

In response, the rejection of claim 7 under 35 U.S.C. 103(a) as being unpatentable JP **10-245693** ('693) in combination with **Passal** (US Patent No. 3,697,391) as applied to claims 1-6, 8 and 24 above, and further in view of **Hui** (US Patent No. 6,372,118 B2) has been maintained for reasons as discussed above.

Applicants' remarks have been fully considered but they are not deemed to be persuasive.

(vii) Applicants state that independent claim 9 and claims dependent therefrom are NOT obvious over JP '693 and Passal for substantially the same reasons that claim 1 is not obvious over JP '693 and Passal.

In response, the rejection of claims 9-12, 15-17 and 25 under 35 U.S.C. 103(a) as being unpatentable over JP **10-245693** ('693) in combination with **Passal** (US Patent No. 3,697,391) has been maintained for reasons as discussed above.

Applicants' remarks have been fully considered but they are not deemed to be persuasive.

(viii) Applicants state that claim 13 is NOT obvious over JP '693, Passal, and SU '847 for substantially the same reasons that claim 9 is not obvious over JP '693 and Passal.

In response, the rejection of claim 13 under 35 U.S.C. 103(a) as being unpatentable over **JP 10-245693** ('693) in combination with **Passal** (US Patent No. 3,697,391) as applied to claims 9-12, 15-17 and 25 above, and further in view of **SU 1544847** ('847) has been maintained for reasons as discussed above.

Applicants' remarks have been fully considered but they are not deemed to be persuasive.

(ix) Applicants state that independent claim 18 and claims dependent therefrom are NOT obvious over JP '693 and Passal for substantially the same reasons that claim 1 is not obvious over JP '693 and Passal.

In response, the rejection of claims 18-23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 10-245693** ('693) in combination with **Passal** (US Patent No. 3,697,391) has been maintained for reasons as discussed above.

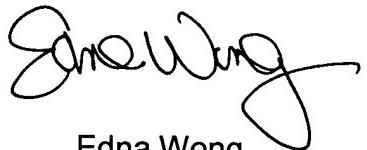
Applicants' remarks have been fully considered but they are not deemed to be persuasive.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Edna Wong

Conferees:



Nam Nguyen



Patrick Ryan